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Andy Harjanto

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EXAMINER

STACE, BRENT S

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/620,095

Applicant(s)

HARJANTO, ANDY

Examiner

Brent S. Stace

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2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-4, 7-9, 12, 14-16, 18-21 and 29-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 7-9, 12, 14-16, 18-21 and 29-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Remarks*

1. This communication is responsive to the amendment filed October 3<sup>rd</sup>, 2006. Claims 2-4, 7-9, 12, 14-16, 18-21, and 29-39 are pending. In the amendment filed October 3<sup>rd</sup>, 2006, Claims 30, 31, 37, 38, and 39 are amended and Claims 31, 37, 38, and 39 are independent Claims. The examiner acknowledges that no new matter was introduced and the claims are supported by the specification.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 3<sup>rd</sup>, 2006 has been entered.

### *Response to Arguments*

3. Applicant's arguments with respect to Claims 2-4, 7-9, 12, 14-16, 18-21, and 29-39 for Balabine failing to disclose "[defining] relationships linking different attributes of different objects, wherein defining the relationships includes creating pointers linking each object by a defined attribute relationship with another object" and "a first expression component reciting a view name, wherein the view name is a particular

defined name of a particular one of the defined attribute relationships," the examiner respectfully disagrees.

For the "[defining] relationships linking different attributes of different objects, wherein defining the relationships includes creating pointers linking each object by a defined attribute relationship with another object" limitation, Mani, col. 9, lines 50-52 with Balabine, col. 7, lines 30-50 with Balabine, Fig. 1 and Mani, col. 3, lines 54-56 with Balabine, col. 3, lines 40-44 with Balabine, col. 10, lines 32-35 were used in rejecting this limitation. Mani, in the cited sections, teaches directed pointers and links from a node to another node. These pointers and links form the relationships between nodes. Balabine, in the cited sections, teaches a BEM that contains user-desired mappings from database tables and rows to file system objects. BEM's are defined relationships (that must have been defined prior to use) linking different attributes from the database tables to different file system objects (via a mapping method). Additionally, Balabine teaches that a type of file system object is selected for each table and row (Balabine, col. 7, lines 35-38 as cited). Balabine, however, is implemented on a directory hierarchy. Since this is how Balabine is implemented, Balabine implies parent-child relationships. To meet the associated limitation to this, Mani was used in combination with Balabine. Mani defines graphs, which are not necessarily trees and are not necessarily a directory hierarchy. It can be seen that the definition of child in Mani overrides the conventional definition of child in the art (relating to graphs instead of trees). A "child" in Mani is merely a node that is pointed to by another node. Additionally, Mani creates relationship sets of data based on the data's relationship

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(Mani, col. 6, lines 25-35 as cited). An example of a relationship set is a set of data that is made up of just children. As such, and in summary, defining relationships with attributes and objects is taken from Balabine while the relationship types made and the pointers/links come from Mani.

For the “a first expression component reciting a view name, wherein the view name is a particular defined name of a particular one of the defined attribute relationships” limitation, Mani, col. 9, lines 50-52 with Mani, col. 6, lines 30-34 with Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 34-56 were used in rejecting this limitation. The citings in Balabine teach that BEMs exist as different mappings to data. Additionally, BEMs “provide a different interpretation of the same database object” (different views of a database). When a query is run on Balabine, it must specify which BEM to use (so it can display data correctly (Balabine, bytes 9 and 10 (or 19-32) in Fig. 9)). Therefore, the queries created in Balabine recite a view name by BEM identification. Mani, col. 6, lines 30-34 teaches that 8 relationship sets are created where each relationship set has a name (e.g. child) that represents all elements that are children. These relationship sets are created to aid in query optimization and processing. It is construed by the combination of Balabine and Mani that the queries of Balabine are optimized and processed and use these structural relationship sets. Therefore the queries in Balabine also refer to relationship sets by the names of the relationships sets used to optimize/process the query (reference is either directly or indirectly). Additionally, Mani attempts to find these relationship sets by finding the defined relations or discovering them by the schema extractor (as cited). Alternatively,

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the views of Mani (relationship set names) could be used in Balabine's invention so that views better distinguished.

4. The other claims argued merely because of a dependency on a previously argued claim(s) in the arguments presented to the examiner, filed October 3<sup>rd</sup>, 2006, are moot in view of the examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections (see below).

### ***Response to Amendment***

#### ***Claim Objections***

5. In light of the applicant's respective arguments or respective amendments, the previous claim objections to the claims have been withdrawn.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4, 12, 14, 18-21, 29, 30, 31, 34, 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.).

For **Claim 31**, Balabine teaches: "A method for accessing objects in a database, [Balabine, col. 5, lines 21-46] comprising:

- storing objects in a database, where in the objects each comprise corresponding attributes; [Balabine, cols. 5-6, lines 63-4 with Balabine, col. 2, lines 50-55 with Balabine, Fig. 1]
- receiving a client request for accessing a requested object in the database, [Balabine, col. 6, lines 23-31 with Balabine, col. 9, lines 38-54]
- processing the client request comprising the location path expression to locate the requested object" [Balabine, col. 6, lines 23-33 with Balabine, Fig. 5C].

Balabine discloses the above limitations but does not expressly teach:

- "defining relationships linking different attributes of different objects, wherein defining the relationships includes creating pointers linking each object by a defined attribute relationship with another object, and such that the defined attribute relationships comprise linked paths between the objects, as defined by their attributes, and wherein the defined relationships comprise relationships other than parent-child relationships defined by a directory hierarchy, and wherein defining attribute relationships for linking objects enables objects of different types to be linked by the defined attribute relationships, each attribute relationship comprising a defined name;

- wherein the request is entered in the format of a location path expressing having the following format:
- a first expression component reciting a view name, wherein the view name is a particular defined name of a particular one of the defined attribute relationships; and
- at least one path element defining one of the objects related by the defined attribute relationship associated with the view name and that defines at least a portion of a linked path to the requested object;
- returning the requested object and any other data specified in the location path expression to a client.”

With respect to Claim 31, an analogous art, Mani, teaches:

- “defining relationships linking different attributes of different objects, [Mani, col. 9, lines 50-52 with Balabine, col. 7, lines 35-50 with Balabine, Fig. 1] wherein defining the relationships includes creating pointers linking each object by a defined attribute relationship with another object, and such that the defined attribute relationships comprise linked paths between the objects, as defined by their attributes, [Mani, col. 3, lines 54-56 with Balabine, col. 3, lines 40-44 with Balabine, col. 7, lines 30-34 with Balabine, col. 10, lines 32-35 with Balabine, Fig. 1] and wherein the defined relationships comprise relationships other than parent-child relationships defined by a directory hierarchy, [Mani, col. 6, lines 25-35] and wherein defining attribute relationships for linking objects enables



objects of different types to be linked by the defined attribute relationships, [Mani, col. 3, lines 60-64 with Mani, col. 4, lines 6-9 with Mani, col. 9, lines 50-52 with Balabine, col. 7, lines 35-50 with Balabine, Fig. 1] each attribute relationship comprising a defined name; [Mani, col. 6, lines 25-35]

- wherein the request is entered in the format of a location path expression [Mani, col. 2, lines 65-66 with Mani, col. 12, lines 55-58] having the following format:
  - a first expression component reciting a view name, wherein the view name is a particular defined name of a particular one of the defined attribute relationships; [Mani, col. 9, lines 50-52 with Mani, col. 6, lines 30-34 with Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 34-56] and
  - at least one path element defining one of the objects related by the defined attribute relationship associated with the view name and that defines at least a portion of a linked path to the requested object; [Mani, col. 12, lines 55-58 with Mani, col. 2, lines 65-66]
- returning the requested object and any other data specified in the location path expression to a client" [Mani, col. 2, lines 58-66 with Balabine, Fig. 5C].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Mani with Balabine because both inventions are directed towards querying databases.

Mani's invention would have been expected to successfully work well with Balabine's invention because both inventions use databases on computers. Balabine

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discloses a database interface for database unaware applications comprising mapping database elements to different relationships based on user specifications, however Balabine does not expressly disclose that the relationships can be more than parent-child relationships using pointers, view names, location path expressions having the format above, or returning the requested object and any other data specified in the location path expression to a client. Mani discloses a system and method for query processing and optimization for xml repositories comprising more than parent-child relationships using pointers, view names, location path expressions having the format above, and returning the requested object and any other data specified in the location path expression to a client.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the relationships other than parent-child relationships using pointers, view names, location path expressions having the format above, or returning the requested object and any other data from Mani and install it into the invention of Balabine, thereby offering the obvious advantage of making arbitrary relationships as desired (and implied) in Balabine, using pointers to easily link objects together to form relationships, thus conserving memory, using view names to obtain a certain view of the data (supporting the many BEMs of Balabine) thus making views more memorable to a user and distinguishable, and location path expressions supporting the selection of the particular view requested from the many BEMs of Balabine and the element requested to return not only the requested element, but other data requested (as requested from the client).

**Claim 2** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 31, further comprising reviewing configuration information to identify the defined attribute relationship associated with the view name in the location path expression" [Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 34-56 with Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-55 with Mani, col. 9, lines 50-52 with Mani, col. 6, lines 30-34].

**Claim 3** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 2, wherein reviewing configuration information further identifies a root level starting point associated with the view name" [Balabine, col. 6, lines 23-31 with Balabine, col. 6, lines 47-55 with Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 34-56 with Balabine, col. 9, lines 38-54 with Mani, col. 12, lines 15-19].

**Claim 4** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 2, wherein reviewing the configuration determines whether the client has permission to access the database based on the defined attribute relationship" [Balabine, col. 7, lines 12-35].

**Claim 12** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 31, wherein the database is a directory service database" [Balabine, col. 6, lines 5-10 with Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-56].

**Claim 14** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 38, further comprising obtaining configuration information from the server defining the relationships linking attributes of the objects in the database

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and associated view names thereof" [Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-55 with Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 34-56 with Balabine, Figs. 7 and 8 with Mani, col. 6, lines 30-34].

**Claims 18-20 and 21** encompass substantially the same scope of the invention as that of Claims 2-4 and 12, respectfully, in addition a to computer-readable medium and some instructions for a database server of a database for performing the computer-readable medium instructions of Claims 2-4 and 12, respectfully. Therefore, Claims 18-20, and 21 are rejected for the same reasons as stated above with respect to Claims 2-4 and 12, respectfully.

**Claim 29** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 38, wherein the server is a database server of the database" [Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-56 with Balabine, col. 9, lines 38-54 with Balabine, Figs. 7 and 8 with Mani, col. 5, lines 26-31].

**Claim 30** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 38, wherein the database is a directory service database" [Balabine, col. 6, lines 5-10 with Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-56].

**Claim 34** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 31, where in at least one of the defined attribute relationships includes a relationship between objects of different types that are linked by an attribute relationship" [Mani, col. 3, lines 60-64 with Mani, col. 4, lines 6-9 with Mani, col. 9, lines 50-52 with Balabine, col. 7, lines 35-50 with Balabine, Fig. 1].

**Claim 36** can be mapped to Balabine (as modified by Mani) as follows: "A method as recited in claim 31, wherein the method further includes:

- providing an application programming interface (API) from which applications on the client issue function calls to form the data path expression and to send the data path expression over a transport protocol to a Web service for directory access to the database"[Mani, col. 3, lines 50-55 with Mani, col. 4, lines 34-36 with Mani, col. 5, lines 27-31].

**Claim 37** encompasses substantially the same scope of the invention as that of Claim 31, in addition to a computer program product and some instructions for performing the method steps of Claim 31. Therefore, Claim 37 is rejected for the same reasons as stated above with respect to Claim 31. Additionally, Claim 37 recites "one or more physical computer-readable media having stored thereon computer-executable instructions that, when executed by a processor, cause a computing system to perform the following" that can be mapped to Balabine (as modified by Mani) as follows: [Balabine, cols. 10-11, lines 60-20].

**Claim 38** encompasses substantially the same scope of the invention as that of Claim 31, in addition to a method and some steps for performing the method steps of Claim 31. Therefore, Claim 38 is rejected for the same reasons as stated above with respect to Claim 31. Additionally, Claim 38 recites "a method for receiving objects requested from a database, the method comprising: connecting with a server providing access to objects stored in a database" that can be mapped to Balabine (as modified by Mani) as follows: [Balabine, cols. 10-11, lines 60-20 with Balabine, col. 9, lines 65-67].

**Claim 39** encompasses substantially the same scope of the invention as that of Claim 31, in addition to a computer program product and some instructions for performing the method steps of Claim 31. Therefore, Claim 39 is rejected for the same reasons as stated above with respect to Claim 31. Additionally, Claim 39 recites "one or more physical computer-readable media having stored thereon computer-executable instructions that, when executed by a processor, cause a computing system to perform the following: connect with a server providing access to objects stored in a database" that can be mapped to Balabine (as modified by Mani) as follows: [Balabine, cols. 10-11, lines 60-20 with Balabine, col. 9, lines 65-67].

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.), further in view of U.S. Patent No. 6,366,954 (Traversat et al.).

For **Claim 32**, Balabine (as modified by Mani) teaches: "A method as recited in claim 31."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein the database is a database of a Web service, and wherein the location path expression is translated into a plurality of LDAP queries that are processed by the Web service to satisfy the client request and that are iteratively processed until the client request is satisfied."

With respect to Claim 32, an analogous art, Traversat, teaches: "...wherein the database is a database of a Web service, and wherein the location path expression is

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translated into a plurality of LDAP queries that are processed by the Web service to satisfy the client request and that are iteratively processed until the client request is satisfied" [Traversat, col. 5, lines 38-42 with Balabine, col. 6, lines 31-39 with Balabine, col. 6, lines 47-56].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Traversat with Balabine (as modified by Mani) because both inventions are directed towards using directory services.

Traversat's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use databases and Balabine (as modified by Mani) teaches that his invention can conform to other protocols (Balabine, col. 9, lines 54-60). Balabine discloses a database interface for database unaware applications comprising the use of a network file system (NFS), however Balabine (as modified by Mani) does not expressly disclose that LDAP is used as the protocol on how the queries in Balabine (as modified by Mani) are formulated/formatted. Traversat discloses a method and data format for exchanging data between a java system database entry and an LDAP directory service comprising the use of the LDAP in directory services.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the use of the LDAP in directory services from Traversat and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of tuning directories of Balabine (as modified by Mani) or

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Traversat to give quick-responses to high-volume lookup or search operations (Traversat, cols. 5-6, lines 60-13).

9. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.), further in view of U.S. Patent Application Publication No. 2003/0126136 (Omoigui).

For **Claim 7**, Balabine (as modified by Mani) teaches: "A method as recited in claim 31."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein client request is received according to the Simple Object Access Protocol (SOAP)."

With respect to Claim 7, an analogous art, Omoigui, teaches: "...wherein client request is received according to the Simple Object Access Protocol (SOAP)" [Omoigui, paragraph [0308]].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Omoigui with Balabine (as modified by Mani) because both inventions are directed towards communicating across a network.

Omoigui's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use computers communicating across a network. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising issuing queries and



communicating across a network, however Balabine (as modified by Mani) does not expressly disclose that the SOAP is used. Omoigui discloses a system and method for knowledge retrieval, management, delivery, and presentation comprising using SOAP messages for communication.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the SOAP communication messages from Omoigui and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of gaining the security features of SOAP as described in Omoigui paragraph [0308].

For **Claim 15**, Balabine (as modified by Mani) teaches: "A method as recited in claim 14."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein sending the request sends the request in a message to the server according to the Simple Object Access Protocol (SOAP)."

With respect to Claim 15, an analogous art, Omoigui, teaches: "...wherein sending the request sends the request in a message to the server according to the Simple Object Access Protocol (SOAP)" [Omoigui, paragraph [0308]].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Omoigui with Balabine (as modified by Mani) because both inventions are directed towards communicating across a network.

Omoigui's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use computers

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communicating across a network. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising issuing queries and communicating across a network, however Balabine (as modified by Mani) does not expressly disclose that the SOAP is used. Omoigui discloses a system and method for knowledge retrieval, management, delivery, and presentation comprising using SOAP messages for communication.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the SOAP communication messages from Omoigui and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of gaining the security features of SOAP as described in Omoigui paragraph [0308].

10. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.), further in view of U.S. Patent No. 5,630,121 (Braden-Harder et al.).

For **Claim 8** Balabine (as modified by Mani) teaches: "A method as recited in claim 31."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein one of the at least one path elements of the location path expression is a wildcard element."

With respect to Claim 8, an analogous art, Braden-Harder, teaches: "...wherein one of the at least one path elements of the location path expression is a wildcard element" [Braden-Harder, col. 10, lines 10-16].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Braden-Harder with Balabine (as modified by Mani) because both inventions are directed towards searching for data.

Braden-Harder's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use queries on databases. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising querying a database, however Balabine (as modified by Mani) does not expressly disclose that the searches can have wildcard characters in them to narrow or broaden a search. Braden-Harder discloses archiving and retrieving multimedia objects using structured indexes comprising the optional use of a wildcard character to narrow or broaden a search query.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the optional use of a wildcard character to narrow or broaden a search query from Braden-Harder and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of gaining an easier way to narrow or broaden a search in Balabine (as modified by Mani) by the use of a wildcard character.

For **Claim 16** Balabine (as modified by Mani) teaches: "A method as recited in claim 38."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein one of the at least one path elements of the location path expression is a wildcard element."

With respect to Claim 16, an analogous art, Braden-Harder, teaches: "...wherein one of the at least one path elements of the location path expression is a wildcard element" [Braden-Harder, col. 10, lines 10-16].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Braden-Harder with Balabine (as modified by Mani) because both inventions are directed towards searching for data.

Braden-Harder's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use queries on databases. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising querying a database, however Balabine (as modified by Mani) does not expressly disclose that the searches can have wildcard characters in them to narrow or broaden a search. Braden-Harder discloses archiving and retrieving multimedia objects using structured indexes comprising the optional use of a wildcard character to narrow or broaden a search query.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the optional use of a wildcard character to narrow or broaden a search query from Braden-Harder and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of gaining an easier way

to narrow or broaden a search in Balabine (as modified by Mani) by the use of a wildcard character.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.), further in view of U.S. Patent No. 5,619,692 (Malkemus et al.).

For **Claim 9**, Balabine (as modified by Mani) teaches: "A method as recited in claim 31."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "...wherein one of the at least one path elements of the location path expression indicates a search in a reversed direction of the predefined relationship."

With respect to Claim 9, an analogous art, Malkemus, teaches: "...wherein one of the at least one path elements of the location path expression indicates a search in a reversed direction of the predefined relationship" [Malkemus, cols. 1-2, lines 60-4].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Malkemus with Balabine (as modified by Mani) because both inventions are directed towards querying a database to retrieve results.

Malkemus's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions can use SQL to query. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising querying a database and retrieving results, however Balabine (as modified by Mani) does not expressly disclose ordering the results of the

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query in a different order(s). Malkemus discloses the semantic optimization of query order requirements using order detection by normalization in a query compiler system comprising the known ways to order results of an SQL query in ascending order (ASC) or descending order (DESC).

It would have been obvious to one of ordinary skill in the art at the time of invention to take the ordering of results from Malkemus and install it into the computer-readable medium of Balabine (as modified by Mani), thereby offering the obvious advantage of retrieving information in different orders according to an attribute.

12. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,442,548 (Balabine et al.) in view of U.S. Patent No. 6,654,734 (Mani et al.), further in view of <http://en.wikipedia.org/w/index.php?title=XPath&oldid=1315639> (XPath).

For **Claim 33**, Balabine (as modified by Mani) teaches: "A method as recited in claim 31, wherein the location path expression includes a plurality of objects related by the defined attribute relationship specified by the view name" [Balabine, cols. 6-7, lines 65-13 with Balabine, col. 7, lines 30-56 with Mani, col. 3, lines 54-56 with Balabine, col. 3, lines 40-44 with Balabine, col. 10, lines 32-35 with Balabine, Fig. 1 with Mani, col. 6, lines 25-35].

Balabine (as modified by Mani) discloses the above limitations but does not expressly teach: "and wherein each of the objects are separated by a forward slash."

With respect to Claim 33, an analogous art, XPath, teaches: "and wherein each of the objects are separated by a forward slash" [XPath, p. 1 with Balabine, Fig. 5C].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine XPath with Balabine (as modified by Mani) because both inventions are directed towards getting information from XML documents.

XPath's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use paths with slashes or sashes. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising querying a database and retrieving results where path names are represented by sashes (backslashes), however Balabine (as modified by Mani) does not expressly disclose that slashes (forward slashes) can be used to access data. XPath discloses a syntax for addressing portions of an XML document to access data comprising an XPath expression (location path) consisting of a string of element or attribute qualifiers separated by forward slashes.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the XPath expressions from XPath and install it into the invention of Balabine (as modified by Mani), thereby offering the obvious advantage of accessing the data of Balabine or Mani by using XPath location path expressions using non-XML syntax for a small query language to execute quick queries against XML data.

For **Claim 35**, Balabine (as modified by Mani) teaches: "A method as recited in claim 31."

Balabine (as modified by Mani) discloses the above limitation but does not expressly teach: "where in the location path expression is written as an abbreviated XPath expression."

With respect to Claim 35, an analogous art, XPath, teaches: "where in the location path expression is written as an abbreviated XPath expression" [XPath, p. 1 with Balabine, Fig. 5C].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine XPath with Balabine (as modified by Mani) because both inventions are directed towards getting information from XML documents.

XPath's invention would have been expected to successfully work well with Balabine (as modified by Mani)'s invention because both inventions use paths. Balabine (as modified by Mani) discloses a database interface for database unaware applications comprising querying a database and retrieving results where path names are represented by slashes (backslashes), however Balabine (as modified by Mani) does not expressly disclose that abbreviated XPath expressions can be used. XPath discloses a syntax for addressing portions of an XML document to access data comprising an XPath expression (location path) consisting of a string of element or attribute qualifiers separated by forward slashes.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the XPath expressions from XPath and install it into the invention of Balabine (as modified by Mani), thereby offering the obvious advantage of accessing



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the data of Balabine or Mani by using XPath location path expressions using non-XML syntax for a small query language to execute quick queries against XML data.

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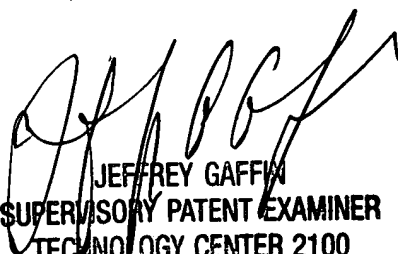
**Conclusion**

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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